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EXAMINER

DANIELS, MATTHEW J

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Response to Arguments

1. Applicant's arguments filed 17 March 2008 have been fully considered but they are not persuasive. The arguments appear to be on the following grounds:

- a) Sato and Medoff are not properly combinable because each reference relates a composition whose mechanical properties are incompatible with the functional goals of the other reference. Therefore, the references teach away from a combination with the other. It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate be inappropriate to use the material of Sato as a resin material to form the matrix of Medoff.
- b) The transition phrase "consisting essentially of" excludes the material of Sato, which includes a rubber material, because the rubber limits the use of Sato's polymer composition as a composite matrix due to its reduced strength and elastic properties.
- c) Medoff's generic disclosure of "polyamides" without any specifically disclosed nylons combined with its disclosure of an extruder temperature of 190 C or less would merely suggest nylons having melt temperatures below 190 C.
- d) While Sato discloses that the metal halide affects the melting point of the polyamide, Sato emphasizes that the important contribution of the metal halide additive is to balance the physical and mechanical properties of the resulting composite. Thus, one optimizing the combination would be concerned with physical/mechanical properties and would be unconcerned with the melting temperature.
- e) Medoff's disclosure of a heat stabilizer is irrelevant to the process. Heat stabilizers are those that protect a polymer from degradation of its properties. They are unrelated to the melting temperature and provides no reason to incorporate the metal halide of Sato.

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f) Objective evidence of non-obviousness suggests that the composites prepared according to the recited processes have substantially improved mechanical properties compared to prior art compositions.

2. These arguments are not persuasive for the following reasons:

a) It is unclear how Sato's teaching that the melt temperature of a polyamide material can be modified by incorporation of a particular additive can be argued to teach away from Medoff's teaching of a molding method which uses a polyamide. Applicants appear to argue that it would be unobvious to apply the melt suppression technique of Sato to other processes, and thus cannot be combined with Medoff. However, it is now accepted that (1) use of known technique to improve similar method in the same way, or (2) application of a known technique to a known method ready for improvement which yields predictable results, may be sufficient rationale for combining references. See MPEP 2141.

Additionally, there is an extensive body of literature on the interaction of the various metal halides with polyamides like nylon. In view of the well known nature of the effect of various metal halides on polyamides, it is submitted that this is a prior art technique. It is further submitted that this invention appears to be the application of a known technique (lowering the melt temperature of polyamides using metal halides) to molding processes which already use polyamides.

b) While Sato does appear to teach additional materials, one of ordinary skill in the art practicing the Medoff process would have found it obvious to use a single material (nylon) in view of Medoff's teaching at 10:7-13. It is the Examiner's position that application of the

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improvement of Sato to the Medoff process does not also necessitate incorporation of all additives and polymeric mixtures also by Sato.

However, even if the particular mixture disclosed by Sato is considered as a whole, absent a clear indication in the specification or claims of what the basic and novel characteristics actually are, “consisting essentially of” will be construed as equivalent to “comprising.” If it is contended that additional materials in the prior art are excluded by the recitation of “consisting essentially of,” Applicant has the burden of showing that the introduction of the additional material of Sato would materially change the characteristics of Applicant’s invention. Applicant’s arguments have not pointed to any clear indication in the specification or demonstrated that the introduction of the additional materials of Sato materially changes the characteristic of the invention. No particular strength, hardness, or other characteristic appears to be described.

c) Applicant’s argument does not appear to consider the additional teaching at 5:35 of Medoff, which provides a mixing process which may occur at temperatures of up to 400 F (approximately 204 C). Thus, the Examiner submits that a teaching of molding or shaping at 190 C is not a teaching away from all higher temperatures. Even when Medoff discloses 190 C, it is disclosed as “about” 190 C, which includes some values above 190 C. Additionally, if the ordinary artisan recognizes (from the extensive body of literature and from the Sato method) that other nylons can be suppressed in their melt temperature, it is unclear why these would not fall within the scope of the nylons suggested by Medoff.

d) The reference is prior art for all that it teaches. While Sato teaches additional benefits, the melt temperature adjustment is clearly recognized. As noted above, the extensive body of

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literature on the interaction of the various metal halides with polyamides like nylon suggests that the technique is well known.

e) Medoff suggests more than just heat stabilizers, and suggests inorganic additives generally at 5:10. Lithium chloride is an inorganic additive. Additionally, because one would have found it obvious to apply the known technique of Sato to the known Medoff process, the rejection is maintained.

f) Applicant's arguments above appear to assert that the objective evidence in the specification was given insufficient weight and that it is an unexpected result that cellulosic material reinforces nylon. This is not persuasive. Cellulosic material (sometimes known as lignocellulose) are well known and conventional reinforcing materials for thermoplastics. Additionally, even Medoff recognizes the expected reinforcing benefit of the cellulose fibers in the composite (2:57-58).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MATTHEW J. DANIELS whose telephone number is (571)272-2450. The examiner can normally be reached on Monday - Friday, 8:00 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson can be reached on (571) 272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/Matthew J. Daniels/

Primary Examiner, Art Unit 1791